

Application No. 08/962,362

REMARKS

Claims 1-6, 20-30 and 32-34 are pending. By this Amendment, claim 33 is amended. Specifically, the dependency of claim 33 has been corrected since the claim inadvertently was depending from a canceled claim. No new matter is added by the correction of the claim dependency.

All of the pending claims stand rejected.

Res Judicata

On page 6 of the Office Action, the Examiner asserted "In the instant case, applicant's amendment of claim 1 does not effect [sic] the rejection of claims presented before the board of Patent Appeal and Interferences and further doesn't address the issue of arguments." With all due respect, Applicants do not understand what the Examiner is trying to say. However, it is clear that the amendment of claim 1 removes any res judicata effect from the first Board decision. If Applicants' had not decided that an amendment was appropriate, they would have pursued appeal in the first case to a final resolution. As a matter of law, there is no res judicata with respect to the first Board decision in this case.

Rejection Under 35 U.S.C. § 112

The Examiner rejected claim 33 under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, the Examiner noted an error in the claim dependency of claim 33. This error has been corrected. In view of the correction, Applicants respectfully request withdrawal of the rejection of claim 33 under 35 U.S.C. § 112, second paragraph, as being indefinite.

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Rejection Over Jaskie and Bhargava

The Examiner rejected claims 1-6 and 20-30 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,442,254 to Jaskie further in view of U.S. Patent 5,455,489 to Bhargava. Applicants incorporate by reference their analysis from their Appeal Brief of September 21, 2004. Applicants note their intention of renewing the appeal of this rejection.

Rejection Over Tamatani et al. and Jaskie

The Examiner rejected claims 32 and 33 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 5,892,999 to Tamatani et al. (the Tamatani patent) in view of U.S. Patent 5,442,254 to Jaskie (the Jaskie patent). The Examiner cites the Tamatani patent for disclosing a display comprising ultra-fine phosphor particles with average diameters from 1-100 nanometers. The Examiner admits that the Tamatani patent does not teach particle uniformity disclosed and claimed by Applicants. While the rejection recited the Jaskie patent, the Examiner's analysis repeatedly referred and cited to "Parker et al." In two brief telephone conversations on March 12, 2005, the Examiner clarified that the rejection should have been in view of U.S. Patent 5,460,701 to Parker et al. (the Parker patent) rather than the Jaskie patent. Applicants thank the Examiner for this clarification, and the following analysis is based on the combination of the Tamatani patent in view of the Parker patent. As described below, Applicants assert that the combined teachings of the Tamatani patent and the Parker patent do not render Applicant's claimed invention prima facie obvious. Applicants respectfully request reconsideration of the rejection based on the following comments.

As noted above, the Examiner admits that the Tamatani patent does not discuss the particle size distribution, i.e., particle size uniformity, disclosed and claimed by Applicants. However, the Parker patent does not make up for the deficiencies of the Tamatani patent. In particular, the Parker patent repeatedly refers to their material as nanostructured and/or

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nanocrystalline. See, for example, the title, column 1, lines 4-5 and column 2, lines 52-53. Thus, the materials produced are hard agglomerates with crystals embedded within a polycrystalline material having a submicron crystallite size. The agglomeration is described at column 4, line 67 to column 5, line 1 and at column 6, lines 28-39. All of the examples describe agglomerate sizes. While the Parker patent implies that they can obtain "weak agglomerates," they do not indicate quite what this means, and no evidence is presented that the particles can be dispersed.

The Examiner points to Table 2 with respect to the particle size distribution. However, there are at least two problems with this use of Table 2. First, these refer to the crystallite size and NOT the particle size, i.e., the agglomerate size. Even more importantly, the "width" does not say what the cut off is in evaluating the end points. In a distribution, to understand fully the distribution, the cut off criteria must be expressed. Since the cut off is not described in Table 2, this is only a qualitative criterion that cannot be directly compared to Applicants' quantitative evaluation of the particle size distribution.

Referring to Fig. 12A, grain sizes are shown for the particles formed by the Parker process. These results are discussed at column 7, lines 59-62. However, as noted in the Examples, the agglomerate sizes (10-100 nm) are much larger than the crystallite sizes (1-50 nm) indicating that the particles are significantly fused. Aggregation necessarily results in a significantly broader particle size distribution due to the nature of the aggregation process.

As further evidence of the properties of the particles, Applicants attach an article by Quinton Ford, a representative of the assignee of the Parker patent, Nanophase Technologies Corp. Fig. 5 of the Ford article has a detailed plot of the particle size distribution for aluminum oxide produced using the Physical Vapor technique of the Parker patent. While this plot is in volume-weighted units, it is clear that the distribution is significantly broader than Applicants' claimed distribution. Also, these particles are aggregated in the product materials. The

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aggregated particles will have an even broader distribution. The Ford article pointed refers to their material as nanocrystalline and equates particle size with grain size. The agglomerates fall far short of the uniform properties disclosed and claimed by Applicants.

In summary, the Parker patent does not make up for the deficiencies of the Tamatani patent since the Parker patent does not teach the production of particles with the particle size uniformity disclosed and claimed by Applicants. Specifically, the Parker patent teaches the formation of nanostructured materials that are agglomerates in which the resulting aggregates do not have the narrow particle size distribution of Applicants' claimed invention. The vague unspecified ranges presented in the Parker patent do not teach anything specific about the distribution since they are only qualitative.

Since the Parker patent does not make up for the deficiencies of the Tamatani patent, the combined teachings of the Tamatani patent and the Parker patent do not render Applicants' claimed invention prima facie obvious. Applicants respectfully request withdrawal of the rejection of claims 32 and 33 under 35 U.S.C. § 103(a) as being unpatentable over the Tamatani patent in view of the Parker patent.

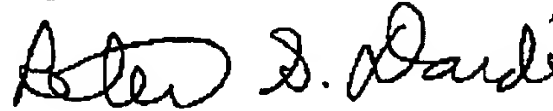
CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

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The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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